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ABSTRACT

New federal proposals have fueled national interest in class-size reduction (CSR). However, CSR raises numerous concerns, some of which are addressed in this policy brief. The text draws on the experiences of states and districts that have implemented CSR. The brief addresses the following 15 concerns: Do small classes in and of themselves affect student learning? What conditions are critical to achieving the small-class effect? What do we know about why small classes are academically beneficial? How small is small enough? Can small-class features be identified and used in large classes to create a small-class environment? For how long do students need to be in small classes to gain lasting benefits? Is CSR worth the cost? How much does CSR typically cost? Are there ways to contain the costs of reducing class size? Is the necessary infrastructure in place to support CSR? Should CSR be used in conjunction with other strategies? Will CSR be optional or mandatory? Will the funding be flat or wealth-adjusted? Will there be a rigid cap or is the number of students per class flexible? Will small classes be self-contained or team-taught? A brief overview of four CSR initiatives is presented. (Contains 27 endnotes.) (RJM)

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Policy Brief

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Class Size Reduction: Lessons Learned from Experience

New federal class size reduction (CSR) proposals have further fueled a growing national interest in this approach to boosting student achievement. CSR is readily understood and appeals to common sense. Many see it as a means of sending dollars directly to the classroom rather than to the bureaucracy. It is enormously popular, a factor that makes it an attractive and politically viable policy option. At this writing, at least half the states and a number of school districts have enacted or are considering some form of CSR.

Though researchers continue to debate the issue, wide agreement exists that the critical question is not whether class size can make a difference in student achievement, but how and under what circumstances it does. Highly related are questions of CSR's costs. Do they outweigh its benefits? Are other alternatives more cost effective? Finally, for those designing CSR policies, especially on a large scale, many questions must be addressed about the implementation trade-offs of differing policy options and how these may affect student outcomes.

This brief addresses each of these concerns, drawing from the experiences of a number of states and districts with some track record implementing CSR. It starts from the position that class size reduction is not a silver bullet or an end in itself. Rather, CSR is one approach that has been shown effective in reaching the real goal: improved early learning. Success depends on getting the numbers down and on policies that support schools' ability to take advantage of the opportunities CSR presents.

Effect on Student Achievement

1. *Do small classes in and of themselves affect student learning?*

"Yes" is the answer that emerged from Project STAR, the largest, longest-lasting, and most controlled study to date on class size. After decades of inconclusive research on small classes, STAR was able to show definitively what parents and teachers have long believed: that bringing class size down in the primary grades in and of itself has positive effects on student achievement in all subject areas (box, p. 7). STAR's small classes had 12–17 students, while the control "large" group had 22–26. Children who gained most from smaller classes were minority students and those in inner-city schools. And the benefits lasted, at least through 7th grade. Several recent smaller studies generally support STAR's findings, notably in terms of gains for urban minority students. (See #9.)

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2. *What conditions are critical to achieving the small-class effect?*

In Project STAR, Tennessee schools were "laboratories" for class size research. Certain conditions prevailed without which the positive effects of small classes may not occur. Chief among those conditions are:

Adequate supply of good teachers. No organizational arrangement, including small class size, can compensate for poor teaching. In Tennessee, all STAR teachers were state certified and qualified to teach in their assigned grades. Even among the small classes, some teachers were more effective than others; researchers have yet to study what may have caused these differences.

> The question is not whether class size can make a difference but how and under what circumstances it does.

Sufficient classroom space. STAR's participating schools had no problem finding appropriate space to create enough classrooms for the reduction in numbers of students per teacher.

A representative student mix in each class. In STAR, the mixture of students in the class was determined at random and so mirrored the diversity in the school as a whole. Research has not revealed what would happen if, for example, 17 pupils with learning or behavior problems were assigned to a small class. In such a case, positive effects are less likely without the infusion of significant additional resources.

Teacher access to adequate materials and services. STAR teachers had no change in the materials and services normally available to them. Small- and regular-class teachers had access to reading specialists, school psychologists, special education programs (although there is evidence that the need for these services was reduced), and other schoolwide services. Small classes were not intended to serve as a substitute for other programs with demonstrated efficacy (including bilingual programs).

3. *What do we know about why small classes are academically beneficial?*

As classes shrink, other possibilities grow. Specifically, some studies have found that small classes allow teachers to spend *more time on instruction* and *less on classroom management.* One such study from Australia also suggested that smaller classes allow more — and more protracted — interaction between teachers and individual students.[1] Limited observations of 52 of STAR's 2nd grade classrooms showed that teachers could better monitor student reading progress and were more consistent in managing behavior.[2] Likewise, observations of small and regular classes in North Carolina discovered more "on-task events" and fewer "institutional events" (e.g., disciplinary or organizational) in the small classes.[3]

In California, which began shrinking primary-grade classes in 1996, teachers surveyed in a preliminary study report that they are using more small-group instruction and better assessment techniques.[4] They also say they can cover the curriculum faster and in greater depth. The study also supports STAR findings that students in small classes are more motivated. In a STAR follow-up questionnaire, 4th grade teachers rated students from small classes much higher than their large-class counterparts on *effort* (e.g., pays attention in class; completes assignments; works well with other children) and *initiative taking* (e.g., does more than just the assigned work; asks questions to get more information). Small-class students, they said, were *far less apt to be disruptive, passive, or withdrawn.*[5] Given the high stability of behaviors such as these over the years, it may be that both the immediate and long-term benefits of small classes occur because students are better engaged.

4. *How small is small enough?*

No one knows what the optimal class size is. Many states and districts are currently shrinking classes to 20 or 18.[6] STAR researchers continue to analyze the question, but can only say at this point that the greater the class size beyond 17, the less the likelihood that the outcomes will be as positive. Earlier research suggested that the most dramatic gains accrue when class size shrinks to 15 or below.[7] Another unknown is the academic influence of the

"drop factor," i.e., the magnitude of the drop in class size. For example, a drop from 30 to 18 is clearly more dramatic (and expensive) than a drop from 22 to 18. Whether it makes a greater difference in student learning is unclear.

5. *Can small-class features be identified and used in large classes to create a small-class environment?*

While some suggest that using grouping strategies in large classes can help create a small-class environment, Project STAR found that the defining feature of success is smallness itself. STAR analysts conclude that only smallness reduces the number of institutional events, creates an environment in which every student becomes engaged in learning, and allows the teacher to attend to every student. Not addressed by STAR are variations on reducing class size all day in all classes — for example, placing students in small classes for part of the day for subjects such as reading and math while having larger groups for PE or art. (See #9.)

6. *For how long do students need to be in small classes to gain the lasting benefits?*

No one knows. The STAR research as well as a smaller study done in North Carolina[8] suggest that the main benefits occur in the first year a student is in a small class and are sustained — or increase slightly — after that. Economist Alan Krueger says a possible explanation is that attending a small class in the lower grades may confer a one-time "school socialization effect" that permanently raises the level of student achievement.[9] Others surmise that successive years of small classes may have helped sustain the gains. But researchers as yet cannot say whether one year of small classes may be just as effective as three or four and, if so, which age or grade level should be the focus. STAR data are currently being re-analyzed to answer these questions.

Costs and Benefits

7. *Is CSR worth the cost?*

Whether CSR is cost-effective is a matter of much debate. One problem is that although cost ingredients can be fairly reliably calculated (see #8), quantifying benefits is more complex. Consider that the effects on reading may be different from those on math, for example, or that effects may differ from one student population to another.[10]

Some argue that in the long run, potential benefits may offset costs. In addition to across-the-board academic gains, some research suggests that small classes in the primary grades begin students on a path that reduces the need for special education, grade retentions or disciplinary measures and increases the likelihood of high school graduation.[11] Such outcomes translate into real savings.

To date, there are few well-controlled studies that compare one intervention with another. That makes it difficult for policymakers to weigh an investment in CSR against spending on alternatives such as peer tutoring, professional development, or computer-assisted instruction that have been shown effective (though not in large-scale, randomized experiments such as STAR).

> How much academic improvement is enough to justify a given expenditure?

The issue is further complicated by questions of social priorities. If CSR is deemed important for the next generation of students, how much is too much to spend? More specifically, how much academic improvement is enough to justify a given expenditure? And CSR's popularity adds yet another dimension to the debate: political viability. As Congress bogged down in partisan arguments last year over school reform and national testing, California's "bold stroke" of CSR had the backing of educators, Democrats, Republicans, unions, and taxpayers.[12] For policymakers convinced of CSR's benefits but concerned about its costs, this widespread appeal may hold sway.

Economic analyses of CSR's worth may have confused the issue rather than providing answers. Economists

have debated whether there is a relationship between class size and student learning. (Among them, Hanushek concludes there is no relationship; others, e.g., Hedges et al. and Wenglinsky, disagree.[13]) But in fact, such studies have looked at pupil-teacher ratio rather than actual class size, and the two are not the same.

Pupil-teacher ratio is the number of students in a school or district compared to the number of teaching professionals. In an urban district, which may employ a number of part-time professionals such as Title I and special education teachers or reading specialists, that ratio may be 15:1 or lower, though each regular class with its own teacher may contain 30 or more children. In STAR, other small-class research, and in state CSR initiatives discussed in this brief, "small classes" has meant the number of pupils actually in classrooms.

8. *How much does CSR typically cost?*

Calculating the cost of a statewide CSR program involves considering a number of ingredients,[14] including:

- Initial average class size. The larger the drop to "small," the greater the cost.

- Whether there is a rigid cap or flexibility in the number of students per teacher. A rigid cap will increase the cost by decreasing the final average class size. Schools will keep numbers down to ensure staying below the cap.

CSR policies can target certain children or encourage local creativity in attaining learning goals.

- The cost of teachers hired for CSR. This depends on the salary scale of each district and the experience level of the teachers hired. Teacher costs will increase with time as teachers move up the salary ladder. And costs of teacher support may need to be factored in. (See California example that follows and #10.)

- The cost of facilities for providing new classrooms.

- Added operational costs such as costs for utilities and for custodial and clerical services when a once-closed school is re-opened.

- Potential cost offsets, e.g., due to less grade retention. (See #7.)

As an example, costs in California have played out as follows:

- *Operations.* Some $771 million allocated the first year covered incentive funding of $650 (since raised to $800) for each primary-grade student in a class of no more than 20. Actual per-pupil costs varied by district from $0 to $1,000. Actual class sizes are about 19:1 to ensure remaining under the cap — and such hedging increases costs by as much as 21 percent. If the class size *averaged* 20, per-pupil costs for the average district would be $630, according to the Legislative Analyst, who estimates a long-run per-pupil cost of about $1,020 (in current dollars) or a statewide annual total of at least $1.3 billion.

- *Facilities.* The state allocated $200 million the first year. Actual expenditures were about $500 million, though many schools merely reconfigured existing space. The average first-year cost of $28,000 per new classroom jumps to an estimated $73,000 for completing K–3 reductions, since districts must now purchase portables or build. Again, the rigid cap — rather than an average of 20 — significantly increases costs.

- *Staff development.* Under California's legislation, districts must use existing funds to provide staff development specific to smaller classes. ("Staff development" here encompasses not only inservice but also — *de facto* — preservice development for teachers hired on emergency permits.) No district spending estimates are available, but with so many inexperienced and/or uncredentialed teachers (see box, p. 9), the need for support is great.

9. *Are there ways to contain the costs of reducing class size?*

Hiring more teachers and creating more classrooms is an expensive way to gain the benefits of smaller classes. Alternative ways of funding CSR can help contain the costs. These include:

Targeting the resources. The investment can be directed to schools that need it most — for example, those serving poor and/or minority students. After studying whether CSR's benefits could be gained at a lower cost, economist Allan Odden recommended reducing class size for students achieving below grade level and combining individual tutoring with classes reduced to 15 students for language arts–reading instruction.[15] He also proposed coupling small classes with a "larger, comprehensive set of strategies" shown to be effective for low-income, ethnic, and language minority students.

Wisconsin's Student Achievement Guarantee in Education (SAGE) chose this tack. SAGE targets primary-grade children who live in poverty. It provides up to $2000 extra dollars per low-income student in participating classrooms at 30 schools. Besides maintaining a 15:1 ratio, SAGE requires its schools to implement a rigorous academic curriculum, provide before- and after-school activities, and implement professional development and accountability plans. A first-year evaluation showed SAGE students performing significantly better than a comparison group in reading, language arts, and math.[16] African-American males, in particular, seemed to benefit.

Allowing local flexibility in attaining smaller-class goals. Policies can set CSR goals as a means of improving achievement, then encourage local creativity in reaching those goals. Schools can combine new funding with a reallocation of existing funds as well as re-think schedules to devise an array of small-class arrangements. Approaches being tried include:

Redistributing resources. A number of districts or schools have re-examined all available resources with an eye on finding ways to apply funds to CSR. Title I funds have become one common means of reducing class sizes in high-poverty schools. Two examples from North Carolina are Oak Hill Elementary in Guilford County, which has reduced class sizes in K–2 from 23 to 15,[17] and Hillcrest Elementary in Burke County, which in 1991 began using Title I funds to reduce grades 1–3 to 15 as part of a countywide CSR initiative.

Burke County has defrayed CSR's costs by using state dollars for full-time teacher assistants to fund regular teaching positions instead. State funds given to Burke as a "low-wealth" county have been applied to the CSR initiative as well. Schools in other parts of the state, such as Draper Elementary in Rockingham County, have adopted a whole-school approach to reduce classes to approximately 13 in grades 1–4. The K–5 school had 23 teaching positions plus two teacher assistants, two "specialty" positions (PE, Spanish, music), and a Title I teacher. By eliminating categorization and re-defining roles, the school "found" five extra teacher positions to use for its CSR initiative.

Strategies effective in one locale may not work well in another.

Creative scheduling. Some school faculties have also devised alternative schedules to reduce class size for a portion of the day. Little research has been conducted on the impact on students learning, but such changes can potentially achieve some of the benefits of smaller classes. One variation is *parallel block scheduling.*[18] While half the class are taught critical subject areas such as reading and math, the rest attend specialty classes such as music, art, or computer lab in larger groups. Another variation is the Oak Park Plan,[19] which requires that all teachers in a school — including specialists — teach 15 students in core academic areas (reading, language arts, and math) for three hours a day. For the remaining 2.5 hours, subjects are taught in regular class sizes of approximately 25 students, and specialists provide services and consultation. (See also #14.)

Policy Choices and Trade-Offs

Drafting CSR legislation or initiatives involves weighing a range of choices, trade-offs, and as yet unanswered questions. Factors such as scale of implementation, demographics, resources, student mobility and enrollment growth rates vary markedly from place to place, making it difficult to say that strategies effective in one locale will be equally so in another. Questions to address when designing CSR policies include:

10. *Is the necessary infrastructure in place to support CSR?*

The two key infrastructure pieces are teaching and facilities, and each has its own set of questions.

Teaching. Will there be enough qualified teachers for the number of new classrooms created? Are existing policies on emergency or alternative credentialing consistent with your goals? Will there be enough specially-trained teachers — e.g., for limited-English proficient (LEP) or special education students? Will the policy create an incentive for teacher job shifts — e.g., from special to general education; from substitute to permanent status; from preschool to primary-grade teaching? If so, what are the implications?

Teachers have reported that a switch to smaller classes finally allowed them to do what they know works. But if CSR leads to the hiring of many inexperienced or unprepared teachers, those teachers will require support (e.g., mentoring; modeling) to learn and use effective classroom strategies. Moreover, in a policy climate in which CSR initiatives are accompanied by raised standards, new assessments, and/or stringent accountability measures, even veteran teachers may need more knowledge and skills, not just smaller classes, to meet increased expectations.

Will there be enough qualified teachers for the number of new classrooms created?

In California, no one knows whether the hiring of thousands of inexperienced and uncredentialed teachers will alter intended outcomes for CSR (see box, p. 9). In some urban districts, schools with the highest concentrations of limited-English proficient students also have the largest numbers of teachers hired for CSR on emergency credentials. They have no special training and, often, no bilingual aides.[20]

Facilities. Will existing facilities accommodate the number of new classrooms created by the new policy? Is enrollment growth a factor? What shifts may occur due to space crunches? Will they affect other programs?

California schools have purchased portables when possible, but many have also usurped space from other programs (see box, p. 9), reconfigured schools (e.g., moving 6th graders to middle schools), switched to year-round scheduling, changed school boundaries, remodeled schools, canceled inter- and intra-district transfers, and/or re-opened schools previously closed.[21] In Nevada, rapid growth and lack of facility funding have resulted in many large, team-taught classes[22] (see matrix and #15). In Utah, space problems have blocked schools in crowded districts from reaching their targeted reduction levels[23] (see matrix).

11. *Should CSR be used in conjunction with other strategies?*

Some research suggests that comprehensive planning can make a difference in the effectiveness of CSR. In a study in Austin, Texas, for example, achievement and attendance remained extremely low at 13 of 15 low-performing schools, while the other two showed dramatic gains.[24] Those two combined CSR with other changes such as new curricula and teaching methods focused on individual attention, increased parent involvement, and health services.

In Utah, which began CSR in 1990, a study found smaller classes most effective in districts that focused on improving achievement rather than just getting the numbers down. Successful schools combined CSR with teacher development, instructional improvement, and productive use of personnel and resources.[25]

In Nevada, where CSR began in 1989, new legislation prompted by school districts allows districts to opt either to expand existing primary-grade CSR to 3rd grade (at a 19:1 ratio) or — after approval from the state superintendent — to use their share of CSR funding to implement comprehensive programs such as Reading Recovery or Success for All, which have been shown effective in improving reading and math achievement in grades 1–3.

12. *Will CSR be optional or mandatory?*

An optional CSR program may, *de facto*, leave school and district leaders with little choice. In California, two realities have made rapid implementation all but mandatory: most districts are loath to turn away money after decades of successive cuts, and CSR's intense popularity and press coverage created enormous pressure to move fast and implement fully.

Tennessee's Project STAR

In 1985, an exceptionally well-designed, scientifically-controlled experiment called Project STAR (Student/Teacher Achievement Ratio) was undertaken in Tennessee to formally test three tentative conclusions that had emerged from decades of class size research: 1) If small classes are academically beneficial, the benefits are obtained as class size is reduced below 20 pupils; 2) Small classes are likely to be most beneficial in the early primary grades; and 3) Students from economically disadvantaged homes are likely to reap the greatest benefits.

The four-year STAR study involved about 7,000 students each year in over 300 classrooms. On entering kindergarten, students were assigned at random to a small class (12–17 students) or regular class (22–26). Teachers were assigned at random as well. Both norm- and criterion-referenced tests were administered at the end of each school year. STAR's results, combined with the weight of other evidence, provide us with better answers than ever before to several key questions policymakers ask when considering class size reduction initiatives.

By design, the STAR study allowed researchers to show a causal relationship between class size and learning, controlling for characteristics of the students and the school. Their analysis showed:

- *positive results for small classes, year after year (K, 1, 2, and 3), in all subject areas and all school locales (inner city, urban, suburban, rural)*
- *similar results for boys and girls*
- *greater academic benefits — often about twice as great — for minority students or students attending inner-city schools*
- *lasting benefits through grade 7 or beyond, even though all students were returned to regular-size classes in grade 4.*

It is important to note that no other interventions accompanied the assignment of pupils to small classes. Teachers were "regular" grade-level teachers, given no special training either during the school year or at other times. The small classes were kept small for the entire day. No special curricula or materials were used. Teachers were allowed to teach as they would normally, making any reasonable accommodations to their class as they might under usual conditions.

STAR researchers and others have been asked many times whether other interventions should accompany a small-class initiative. Unfortunately, STAR did not address this question. It is entirely possible that additional benefits would accrue if teachers were provided with additional materials or assistance, if methods were devised to take maximum advantage of the small-class setting, or if other interventions were introduced as well, e.g., an intensive program in reading instruction. However, these add-ons are not needed to reap the academic benefits of small classes in the primary grades.

— Jeremy Finn

13. *Will the funding be flat or wealth-adjusted?*

It can be argued that an approach allotting the same amount of money for every student is regressive. For example, California's program allots $800 of incentive money for every student in a 20:1 primary class. Given the state's diversity, this "one size fits all policy," combined with public pressure to implement and lack of flexibility, has raised the following equity issues:[26]

Does the policy ensure CSR for minority and inner-city children, who stand to benefit most?

- Some districts already had smaller classes and therefore had little trouble meeting the 20:1 cap within the dollars allotted. Others — particularly urban districts — have had to dig deeply into their own coffers to hire enough teachers and create classrooms, since the allotment fell short of their needs. Money is then diverted away from other grades or programs.

- Urban districts have had the hardest time recruiting qualified teachers. Nearly all of the state's new emergency-credentialed teachers are in the urban schools, which also serve the largest numbers of poor and limited-English proficient children.

- Urban schools have had the hardest time finding space for new classrooms. Many are landlocked and can't sacrifice more playground space for portables.

One upshot is that in California, students most likely to benefit from smaller classes — minority and inner-city children — may be those least likely to have full opportunity to do so.

Formula-based funding can help offset inequities. Utah uses a formula that initially allotted 80 percent of the state K–6 CSR funding on a per-pupil basis, with 20 percent reserved for districts with rapid growth but an insufficient tax base. (By design, the reserve pot is shrinking; eventually, all funding will be allotted per pupil.)

14. *Will there be a rigid cap or is the number of students per class flexible?*

Decisions here have significant implications for cost, teaching quality, facilities, and other logistical considerations. Options include capping the number of students per teacher, specifying an average across a school or district, or specifying differing levels of reductions (e.g., greater reductions in high-poverty schools).

Besides urging a district average to lower program costs, California's Legislative Analyst advocates allowing districts to hire the number of teachers they would need to implement 20:1, but then also allowing flexibility in how the district deploys those teachers. For example, teachers could be assigned to do one-on-one or small-group tutoring to supplement classroom instruction.

Utah does not stipulate a cap. District officials have discretion over allocations to schools, and school staffs have leeway in how they achieve smaller classes. For example, at some schools, half the students attend from 8:00–2:00, the other half from 10:00–4:00. The split schedule allows each group a two-hour time block in classes of 18–20 for subjects such as reading and math. PE and social studies are taught — in some cases team-taught — in classes of 40.

15. *Will small classes be self-contained or team-taught?*

Actual smaller classes are qualitatively different from mere changes in the pupil-teacher ratio. (See #7.) In Nevada, where facilities are funded entirely with local rather than state money, state CSR policy allows the 16:1 ratio in 1st and 2nd grades to be achieved by having two teachers in a classroom with 32 students. In Spring 1998, some 36 percent (down from 40 percent the prior year) of Nevada's "reduced size" 1st and 2nd grade classes contained 32 children with two teachers.[27] Though a limited evaluation study showed small gains over eight years of CSR, many worry that the team-taught classes may be limiting success.

Conclusion

Attention to class size is a timely and appropriate focus for education policy. Class size reduction has enormous intuitive and political appeal, bolstered by research that shows smaller classes are good for learning as well as behavior. But designing a successful CSR policy is no simple matter. As knowledge from state and local experiences continues to evolve, some lessons emerging include:

- Since research shows that children in the primary grades and – especially – minority and low-income children benefit most from smaller classes, it makes sense to direct resources particularly toward these children. For example, funding formulas can strive to offset the difficulties inner-city schools face in attracting good teachers and finding classroom space.

- A fundamental condition for the success of CSR *or any educational intervention* is good teaching. If schools need to hire new or — especially — unprepared teachers to enact a CSR policy, they will need resources for beginning-teacher support. Research, experience, and a policy climate of higher expectations suggest that novices and veterans alike may need support to learn strategies that build on the opportunities smaller classes present.

- CSR requires adequate facilities. Policymakers at all levels need to attend to facility issues or risk compromising expensive investments in smaller classes.

- CSR policies that allow flexibility in use of funds help keep the focus on improving learning, not just getting the numbers down. Schools given leeway in exchange for accountability can tailor decisions to the needs of their own students. School leaders can then use this highly popular reform as a catalyst for engaging each community in comprehensive planning to increase achievement, with smaller classes being a central means to that end.

- It is essential that CSR initiatives be accompanied by evaluation and research, focused especially on unanswered questions, e.g., the outcomes of creative approaches to CSR.

Tennessee Versus California

The profound contrasts between Tennessee's Project STAR and California's experiences illustrate the difficulty of implementing a proven intervention in a different setting. STAR's impressive findings greatly influenced California legislators' decision to enact CSR in 1996. But STAR was an experiment involving over 11,000 students and conducted under controlled conditions. California has instituted a statewide program involving some 1.3 million children and holding no other variables constant. Small classes in STAR averaged 15. California's are closer to Tennessee's control-group size of 22–26. Most students in the STAR study were white or African American. California's K–3 students are exceedingly diverse; nearly one third are not native English speakers. Moreover, Tennessee had no shortage of fully-credentialed teachers or classroom space for implementing STAR. And school staffs had adequate time to prepare. California's first year of implementation, for which staffs had almost no time to plan, required hiring 18,400 new teachers. Half were inexperienced; 30 percent were uncredentialed; and 21 percent were hired on emergency permits, meaning they had college degrees and had passed a competency test, but lacked any preparation for teaching. Finding 18,000 new classrooms meant turning libraries, music rooms, computer and science labs, childcare centers, faculty lounges, and even stages in auditoriums into primary classrooms, either temporarily or permanently. It's too soon to tell whether or how California's achievement outcomes will differ from Tennessee's. Moreover, evaluation will be complicated by such factors as the absence of baseline data to measure gains against, the initial absence of a statewide test as a common yardstick, and the state's plan to make shifts in the statewide test it now has. Once results are in, there's the problem of interpretation, given the range of overlapping reform efforts in California's schools. In short, as Stanford's Michael Kirst says, "If you get an effect, how can you be sure class size is the cause?" Conversely, if you don't get an effect, how can you be sure what got in the way?

Four CSR Initiatives

	Policy Intent, Elements	Allocation	Target	Level of Implementation	Implementation Issues
CA (begun 1996)	• Goal: improve early literacy by lowering K–3 class size from average of 29 to 20. • Voluntary. Incentive dollars offered for each pupil in K–3 class of no more than 20. • Professional development required, using existing funds.	• 1997-8: $800 per pupil or appr. $1.5 billion. • 1996-7: $650 per pupil plus $200 million facilities, or appr. $1.1 billion total.	• All K–3 (appr 1.3 million students). • Implement in 1st, then 2nd, then K and/or 3rd.	• 1997-8: 84%. • 1996-7: 51%.	• Intense public pressure to implement quickly. • Not enough qualified teachers (21% of 1996-7 new hires on emergency permits). • Not enough classroom space (by 1998-99, each small class must be self-contained). • Enrollment boom. • Equity (due to regressive funding, rigid 20:1 cap, no phase-in).
NV (begun 1989)	• Mandatory, phased-in program to lower early-grade size from average of 25 to 16. Began with 1st grade and some at-risk K; expanded to 2nd in 1991-2. • Funding for 1998-9 can be used to reduce 3rd to 19:1 or to adopt proven comprehensive programs (K–3) to improve achievement.	• Funds teachers, based on estimated enrollment. No facilities funding. • 1997-9: $147.5 million. • 1989-97: $254 million. • Funds are appropriated to a CSR trust fund, thus kept separate from the school finance formula (and allowing an accurate count of teachers).	• Grades 1 & 2, at-risk K, and some 3.		• Not enough classroom space (36% of reduced 1st & 2nd grade classes are team taught rather than self-contained). • Enrollment boom, especially in Clark County (Las Vegas), which grew by 75% from 1984-1994.
UT (begun 1990)	• Focus on reading. State strategic plan identifies goal of lowering class size to 10 in K; to 15 in grades 1–3. • Funds distributed by formula: 80% per student, 20% low income (on per-school basis). Is evolving toward 100% allotment on per student basis. • No cap. District flexibility in distribution to schools; school flexibility to be creative. (For middle-school funds, districts must submit advance plan.)	• Approximately $225 per student. • Total allocation approximately $121 million since 1990. (In yrs 1 & 2, districts could use up to 25% for facilities.) • For 1998-9, $9 million added for 7th & 8th grades.	• Initially K–4 (with half of district allocation to focus on K–2); expanded to K–6 in 1996-7. • 1998-9: 7th & 8th grades added. • Low income targeted with 20% of funding.	• Most K–6 classes now 21–25; greatest reductions in K–4.	• Not enough classroom space in non-rural areas. • Enrollment boom (now leveling off).
Burke County, NC (begun 1991)	• Goal: Increase reading and math achievement. • Initial funding from contingency monies. Later funding from supplemental low-wealth state funds, converted teacher assistant funds, and local revenue.	• Approximately $1.2 million dollars annually.	• Grades 1–3. Initially piloted in 1st grade at four elementary schools. Expansion was contingent upon evaluation results. After pilot year, program was expanded to 1st grade in all 14 elementary schools, then to 2nd and 3rd as space allowed.	• Class size of 15 in 1st, 2nd, and 3rd grades in all 14 elementary schools.	• Initial board strife over financing CSR.

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